

John Vogel

Publications and Patents (10-30-2015)

Patents (1)

Vogel, J. and Somerville, S. 2000. Engineering disease resistance with pectate lyase-like genes. U.S. Patent No. 6,864,404.

Research Papers (38)

Schneebeli, K., Mathesius, U., Zwart, A., **Vogel, J.P.**, Bragg, J., Watt, M., 2015 *Brachypodium distachyon* genotypes vary in resistance to *Rhizoctonia solani* anastomosis group 8. **Functional Plant Biology** (in press)

Rellán-Álvarez, R., Lobet, G., Lindner, H., Pradier, P., Sebastian, J., Yee, M., Geng, Y., Trontin, C., LaRue, T., Schrager-Lavelle, S., Haney, C.H., Nieu, R., Maloof, J., Vogel, J.P., José R Dinneny, J.R. 2015 GLO-Roots: an imaging platform enabling multidimensional characterization of soil-grown root systems. **eLife** 10.7554/eLife.07597 DOI: <http://dx.doi.org/10.7554/eLife.07597>

Chochois, V., **Vogel, J.P.**, Rebetzke, G., and Watt, M. 2015 Variation in Adult Plant Phenotypes and Partitioning among Seed and Stem-Borne Roots across *Brachypodium distachyon* Accessions to Exploit in Breeding Cereals for Well-Watered and Drought Environments. **Plant Physiology** Vol. 168: 953-967

Bragg, N.B., Anderton, A., Nieu, R., and **Vogel, J.P.** 2015 *Brachypodium distachyon*. **Agrobacterium Protocols: Volume 1 (Methods in Molecular Biology vol. 1223)** Wang, K., New York, Springer. pp 17-33

Zhao, T., Rui, L., Li, J., Nishimura, M.T., **Vogel, J.P.**, Liu, N., Liu, S., Zhao, Y., Dangl, J.L., and D. Tang, D. 2015 A Truncated NLR Protein, TIR-NBS2, Is Required for Activated Defense Responses in the exo70B1 Mutant. **PLoS Genetics** 11(1)

Gordon, S.P., Priest, H., Des Marais, D.L., Schackwitz, W., Figueroa, M., Martin, J., Bragg, J.N., Tyler, L., Lee, C.R., Bryant, D., Wang, W., Messing, J., Manzaneda, A.J., Kerrie, B., Garvin, D.F., Budak, H., Tuna, M., Mitchell-Olds, T., Pfender, W.F., Juenger, T.E., Mockler, T.C., and **Vogel, J.P.**, 2014 Genome Diversity in *Brachypodium distachyon*: Deep Sequencing of Highly Diverse Inbred Lines **Plant Journal** 79: 361–374 DOI: 10.1111/tpj.12569

Poiré R., Chochois V., Sirault X.R.R., **Vogel J.P.**, Watt M., Furbank R.T., 2014 Digital imaging approaches for phenotyping whole plant nitrogen and phosphorus response in *Brachypodium distachyon*. **Journal of Integrative Plant Biology** 56 (8), pp. 781-796

Tyler L., Fangel J.U., Fagerström A.D., Steinwand M.A., Raab, T.K., Willats, W.G.T., **Vogel, J.P.** 2014 Selection and phenotypic characterization of a core collection of *Brachypodium distachyon* inbred lines **BMC Plant Biology** 14:25 doi:10.1186/1471-2229-14-25

O'Connor, D.L., Runions, A., Sluis, A., Bragg, J., **Vogel, J.P.**, Prusinkiewicz, Hake, S. 2014 A Division in PIN-Mediated Auxin Patterning During Organ Initiation in Grasses **PLoS Computational Biology** DOI: 10.1371/journal.pcbi.1003447

Steinwand, M.A., Young, H.A., Bragg, J.N., Tobias, C.M., and **Vogel, J.P.** 2013 *Brachypodium sylvaticum*, a model for perennial grasses: transformation and inbred line development **PLoS ONE** 8(9): e75180. doi:10.1371/journal.pone.0075180

Wu, X., Wu, J., Luo, Y., Bragg, J., **Vogel, J.**, Gu, Y.Q., 2013 Phylogenetic, Molecular, and Biochemical Characterization of Caffeic Acid o-Methyltransferase Gene Family in *Brachypodium distachyon*. **International Journal of Plant Genomics** 2013 Article ID 423189

Bragg, J.N., Wu, J., Gordon, S.P., Guttman, M.A., Thilmony, R.L., Lazo, G.R., Gu, Y.Q., **Vogel, J.P.** 2012 Generation and Characterization of the Western Regional Research Center *Brachypodium* T-DNA Insertional Mutant Collection **PLoS ONE** 7 (9) art. no. e41916

Cui, Y., Lee, M.Y., Huo, N., Bragg, J., Yan, L., Yuan, C., Li, C., Holditch, S.J., Xie, J., Luo, M.C., Li, D., Yu, J., Martin, J., Schackwitz, W., Gu, Y.Q., **Vogel, J.P.**, Jackson, A.O., Liu, Z., Garvin, D.F. 2012 Fine mapping of the Bsr1 barley stripe mosaic virus resistance gene in the model grass *Brachypodium distachyon*. **PLoS ONE** 7 (6) art. no. e38333

Chuck, G.S., Tobias, C., Sun, L., Kraemer, F., Li, C., Dibble, D., Arora, R., Bragg, J.N., **Vogel, J.P.**, Singh, S., Simmons, B.A., Pauly, M., Hake, S. 2011 Overexpression of the maize Cornglass1 microRNA prevents flowering, improves digestibility, and increases starch content of switchgrass. **Proc. Natl. Acad. Sci.** 108: 17550-17555

Huo, N., Garvin, D.F., You, F.M., McMahon, S., Luo, M.C., Gu, Y.Q., Lazo, G.R., **Vogel, J.P.** 2011 Comparison of a high-density genetic linkage map to genome features in the model grass *Brachypodium distachyon*. **Theor. and Appl. Genet.** 123: 455-464

Tyler, L., Bragg, J.N., Wu, J., Yang, X., Tuskan, G.A., **Vogel, J.P.** 2010 Annotation and comparative analysis of the glycoside hydrolase genes in *Brachypodium distachyon*. **BMC Genomics**. 11: 600

Vogel, J.P., Garvin, D.F., Mockler, T.C., Schmutz, J., Rokhsar, D., Bevan, M.W. et. al. (134 authors in total) 2010 Genome Sequencing and Analysis of The Model Grass *Brachypodium distachyon*. **Nature**. 463: 763-768

Vogel, J.P., Tuna, M., Budak, H., Huo, N., Gu, Y.Q., Steinwand, M.A. 2009 Development of SSR markers and analysis of diversity in Turkish populations of *Brachypodium distachyon*. **BMC Plant Biology**. 9: Article No. 88

Gu, Y.Q., Ma, Y., Huo, N., **Vogel, J.P.**, You, F.M., Lazo, G.R., Nelson, W.M., Soderlund, C., Dvorak, J., Luo, M.C. 2009 A BAC-based physical map of *Brachypodium distachyon* and its comparative analysis with rice and wheat. **BMC Genomics** 10:496.

Garvin, D.F., McKenzie, N., **Vogel, J.P.**, Mockler, T.C., Blankenheim, Z.J., Wright, J., Cheema, J.J.S., Dicks, J., Huo, N., Hayden, D.M., Gu, Y., Tobias, C., Chang, J.H., Chu, A., Trick, M., Michael, T.M., Bevan, M.W., and Snape, J.W. 2009 An SSR-based Genetic Linkage Map of the Model Grass *Brachypodium distachyon*. **Genome** 53: 1-13.

Filiz, E., Ozdemir, B.S., Budak, F., **Vogel, J.P.**, Tuna, M., and Budak, H. 2009 Molecular, morphological, and cytological analysis of diverse *Brachypodium distachyon* inbred lines. **Genome** 52: 876-890.

Wei B., Cai T., Zhang R., Li A., Huo N., Li S., Gu Y.Q., **Vogel J.**, Jia J., Qi Y., Mao, L. 2009 Novel microRNAs uncovered by deep sequencing of small RNA transcriptomes in bread wheat

(*Triticum aestivum* L.) and *Brachypodium distachyon* (L.) Beauv. **Functional and Integrative Genomics** 9(4):499-511. 2009.

Huo, N., **Vogel, J.**, Lazo, J., You, F., Ma, Y., McMahon, S., Dvorak, J., Anderson, O., Luo, M., and Gu, Y. 2008 Structural characterization of *Brachypodium* genome and its syntenic relationship with rice and wheat. **Plant Molecular Biology** 70: 47

Vogel, J., Hill, T. 2008 High-efficiency *Agrobacterium*-mediated transformation of *Brachypodium distachyon* inbred line Bd21-3. **Plant Cell Rep.** 27: 471-478.

Huo, N., Lazo, G., **Vogel, J.**, You, F., Ma, Y., Hayden, D., Colemann-Derr, D., Hill, T., Dvorak, J., Anderson, O., Luo, M., Gu, Y. 2008 The nuclear genome of *Brachypodium distachyon*: analysis of BAC end sequences. **Functional and Integrative Genomics** 8: 135-147

Vorwerk, S., Schiff, C., Santamaria, M., Koh, S., Nishimura, M., **Vogel, J.**, Somerville, C., and Somerville, S. 2007 EDR2 Negatively Regulates Salicylic Acid-Based Defenses and Cell Death During Powdery Mildew Infections of *Arabidopsis thaliana*. **BMC Plant Biology** 7 art. no. 35

Huo, N., Gu, Y., Lazo, G., **Vogel, J.**, Coleman-Derr, D., Luo, M., Thilmony, R., Garvin, D., and Anderson, O. 2006 Construction and characterization of two BAC libraries from *Brachypodium distachyon*, a new model for grass genomics. **Genome** 49:1099-1108

Consonni, C., Humphry, M.E., Hartmann, A., Livaja, M., Durner, J., Westphal, L., **Vogel, J.**, Lipka, V., Kemmerling, B., Schulze-Lefert, P., Somerville, S.C., and Panstruga, R. 2006 Conserved requirement for a plant host cell protein in powdery mildew pathogenesis. **Nature Genetics** 38:716-720

Vogel, J., Gu, Y., Twigg, P., Lazo, G., Laudencia-Chingcuanco, D., Hayden, D., Donze, T., Vivian, L., Stamova, B., and Coleman-Derr, D. 2006 EST sequencing and phylogenetic analysis of the model grass *Brachypodium distachyon*. **Theor. and Appl. Genet.** 113:186–195

Vogel, J., Garvin, D., Leong, O., and Hayden, D. 2006 *Agrobacterium*-mediated transformation and inbred line development in the model grass *Brachypodium distachyon*. **Plant Cell Tiss. and Organ Cult.** 84:199-211

Vogel, J., Raab, T., Somerville, C. and Somerville, S. 2004 Mutations in PMR5 result in powdery mildew resistance and altered cell wall composition. **Plant J.** 40: 968-978

Nishimura, M., Stein, M., Hou, B., **Vogel, J.**, Edwards, H., Somerville, S. 2003 Loss of a callose synthase results in salicylic acid-dependent disease resistance. **Science** 301: 969-972

Vogel, J., Raab, T., Schiff, C. and Somerville, S. 2002. *PMR6*, a pectate lyase-like gene required for powdery mildew susceptibility in *Arabidopsis*. **Plant Cell** 14: 2095-2106

Kloek, A., Verbsky, M., Sharma, S., Schoelz, J., **Vogel, J.**, Klessig, D., Kunkel, B. 2001 Resistance to *Pseudomonas syringae* conferred by an *Arabidopsis thaliana* coronatine-insensitive (*coi1*) mutation occurs through two distinct mechanisms. **Plant J.** 26: 509-522.

Vogel, J. and Somerville, S. 2000. Isolation and characterization of powdery mildew resistant *Arabidopsis* mutants. **Proc. Natl. Acad. Sci.** 97: 1897-1902.

Woeste K, **Vogel J** and Kieber J. 1999. Factors regulating ethylene biosynthesis in etiolated *Arabidopsis thaliana* seedlings. **Physiologia Plantarum** 105: 478-484.

Vogel, J., Woeste, K., Theologis, A. and Kieber, J. 1998. Recessive and dominant mutations in

the ethylene biosynthetic gene *ACS5* of *Arabidopsis* confer cytokinin-insensitivity and ethylene overproduction, respectively. **Proc. Natl. Acad. Sci.** 95: 4766-4771.

Vogel, J., Schuerman, P., Woeste, K., Brandstatter, I. and Kieber, J. 1998. Isolation and characterization of *Arabidopsis* mutants defective in the induction of ethylene biosynthesis by cytokinin. **Genetics** 149: 417-427.

Reviews (12)

Brutnell, T. P., J. L. Bennetzen and **J. P. Vogel** (2015). *Brachypodium distachyon* and *Setaria viridis*: Model Genetic Systems for the Grasses. Annual Review of Plant Biology. **66**: 465-485.

Fitzgerald, T. L., J. J. Powell, K. Schneebeli, M. M. Hsia, D. M. Gardiner, J. N. Bragg, C. L. McIntyre, J. M. Manners, M. Ayliffe, M. Watt, **J. P. Vogel**, R. J. Henry and K. Kazan (2015). "Brachypodium as an emerging model for cereal-pathogen interactions." Annals of Botany **115**(5): 717-731.

Catalan P, Chalhoub B, Chochois V, Garvin DF, Hasterok R, Manzaneda AJ, Mur LAJ, Peccioni N, Rasmussen SK, **Vogel JP**, Voeur A 2014 Update on the genomics and basic biology of Brachypodium. **Trends in Plant Science** 19 (7), pp. 414-418

Chochois V, **Vogel JP**, Watt M 2012 Application of Brachypodium to the genetic improvement of wheat roots. **J. of Exp. Bot.** 63:3467-3474

Brkljacic J, Grotewold E, Scholl R, Mockler T, Garvin DF, Vain P, Brutnell T, Sibout R, Bevan M, Budak H, Caicedo AL, Gao C, Gu Y, Hazen SP, Holt BF, Hong SY, Jordan M, Manzaneda AJ, Mitchell-Olds T, Mochida K, Mur LAJ, Park CM, Sedbrook J, Watt M, Zheng SJ, **Vogel JP** 2011 Brachypodium as a model for the grasses: Today and the future. **Plant Phys.** 157: 3-13

Mur LAJ, Allainguillaume J, Catalán P, Hasterok R, Jenkins G, Lesniewska K, Thomas I, **Vogel J.** 2011 Exploiting the brachypodium tool box in cereal and grass research. **New Phytologist** 191: 334-347

Bevan, M.W., Garvin, D.F., **Vogel, J.P.** 2010 *Brachypodium distachyon* genomics for sustainable food and fuel production. **Current Opinion in Biotechnology** 21: 211-217

Vogel, J. 2008 Unique aspects of the grass cell wall. **Current Opinion in Plant Biology.** 11: 301-307

Garvin, D., Gu, Y., Hasterok, R., Hazen, S., Jenkins, G., Mockler, T., Mur, LJ., and **Vogel, JP.** 2008 Development of genetic and genomic research resources for *Brachypodium distachyon*, a new model for grass crop research. **Crop Science** 48: S69-S84

Raab, T., **Vogel, J.** 2004 Ecological and agricultural applications of synchrotron IR microscopy. **Infrared Physics & Technology** 45: 393-402

Schulze-Lefert, P. and **Vogel, J.** 2000. Closing the ranks to attack by powdery mildew. **Trends in Plant Science.** 5: 337-342.

Somerville, S. Nishimura, M., Hughes, D., Wilson, I., **Vogel, J.** 1998. Alternate methods of gene discovery -- the candidate EST approach and DNA microarrays. **Cellular Integration of Signaling Pathways in Plant Development.** Springer-Verlag, Berlin. pp. 297-309.

Wilson, I., **Vogel, J.**, and Somerville, S. 1997. Signaling pathways: a common theme in plants

and animals? **Current Biology** 7: R175-R178.

Books edited

Genetics and Genomics of Brachypodium. **J. P. Vogel**. Switzerland, Springer International Publishing. **18**. In press

Book Chapters (7)

Vogel, J.P. (2015) The rise of *Brachypodium* as a model system. Genetics and Genomics of Brachypodium. J. P. Vogel. Switzerland, Springer International Publishing. 18. In press

Hsia, M. M. and **Vogel, J.P.**, (2015). Transformation and T-DNA mutagenesis. Genetics and Genomics of Brachypodium. J. P. Vogel. Switzerland, Springer International Publishing. 18. In press

Gordon, S.P., Liu, L., **Vogel, J.P.** (2015) The genus *Brachypodium* as a model for perenniability and polyploidy Genetics and Genomics of Brachypodium. J. P. Vogel. Switzerland, Springer International Publishing. 18. In press

Granier, F., Lemaire, A., Wang, Y., LeBris, P., Antelme, S., Vogel, J.P., Laudencia-Chingcuanco, D., Richard Sibout, R. (2015) Chemical and radiation mutagenesis: induction and detection by whole genome sequencing. Genetics and Genomics of Brachypodium. J. P. Vogel. Switzerland, Springer International Publishing. 18. In press

Bragg, J. N., T. Ludmila and **Vogel, J.P.** 2012 *Brachypodium distachyon*, A Model for Bioenergy Grasses. **Handbook of Bioenergy Crop Plants**. Kole, C., Joshi, C.P. and Shonnard, D.R., Boca Rotan, Taylor & Francis Group. p 593-618

Vogel, J. P. and Bragg, J.N. 2009 *Brachypodium distachyon*, a New Model for the Triticeae. **Genetics and Genomics of the Triticeae**. Feuillet, C. and Muehlbauer, G. New York, Springer. 7: 427-449.

Vogel, J. and Somerville, S. 2001. Powdery mildew of *Arabidopsis*: a model system for host-parasite interactions. **Powdery Mildews: a Comprehensive Treatise**. APS Press.